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REMARKS

In the Action, claims 1-5 and 7 were rejected under 35 USC §102(b) as being anticipated by the Maruyama et al. patent (U.S. No. 4,681,528). In addition, claims 1-7 were rejected under that same statutory section as being anticipated by the Rogers et al. patent (U.S. No. 5,012,839).

In response to the rejections, all of the claims pending in the case have been amended and it is submitted that all of the remaining claims, namely claims 4-6 and 8-16 are in proper form and patentably distinguish from the prior art.

By this Amendment, original independent claims 1 and 7 have been replaced by new independent claims 8 and 10. Claim 8 relates to an inventive shutoff valve assembly, while claim 10 relates to an integrated mechanical shutoff valve system which utilizes the valve assembly as set forth in claim 8.

In accordance with claim 8, the shutoff valve assembly is used for plastic injection molding and generally includes a housing member, a piston member slidably positioned in the housing member, a biasing member for biasing the piston member to its closed position, and a plate member which is attached to the housing member. The piston member is positioned in an internal cavity in a housing member and has an internal passageway for at least a portion of its length to allow plastic material to pass through the piston member and through an orifice at one end of the housing cavity and therefore into an adjacent mold cavity. The plate member has an opening which allows passage of

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plastic material into the cavity in the housing and therefore through the cavity and piston and into the mold cavity. The piston member has a head member at one end which is biased by a spring member in a direction closing the passageway in the plate member and thus selectively preventing plastic from flowing into the housing.

During the injection molding process, the force of the plastic material from the injection molding machine is sufficient to overcome the biasing force of the biasing member and thus allow plastic material to flow through the housing and into the mold cavity. When the plastic injection pressure is reduced or ceases, then the biasing force returns the piston member to its closed position. In this manner, the invention provides a unique, compact, easily cleanable, mechanical shutoff valve for plastic injection molding which provides a positive spring biased seal and prevents any resin or backflow past the shutoff valve. The present invention also reduces the complexity and cost of the associated tooling, process and peripheral equipment for such applications. The mechanical shutoff valve can also be integrated into the tooling without requiring an external power source or control input.

In addition, the biasing member, which preferably is a coil spring member, is isolated from the resin flow path and thus cannot affect color changes of the plastic material.

Neither of the two cited references, namely the Mayurama, et al. and Rogers, et al. patents whether taken individually or in any permissible combination, disclose or suggest

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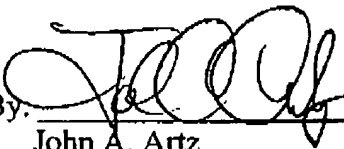
the inventive combination of features forming the Applicant's invention as set forth in new independent claims 8 and 10. Neither of the two cited references disclose or suggest all of the combination of features forming the Applicant's invention as set forth in claims 8 and 10, nor recognize the benefits and advantages achieved thereby.

The remaining claims in the case, namely claims 4-6, 9, and 11-16 are all depend from one of the two independent claims. Since these claims are all dependent from one of the independent claims, they are allowable for the same reasons as independent claims 8 and 10.

In view of the foregoing, it is submitted that all of the claims remaining in the case, namely claims 4-6 and 8-16 patentably distinguish from the prior art. Accordingly, allowance of the claims and passage of the application to issuance are respectfully solicited.

Respectfully submitted,

ARTZ & ARTZ

By: 
John A. Artz
Reg. No. 25,824
28333 Telegraph Road, Suite 250
Southfield, MI 48034
Phone: (248) 223-9500

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